The 2nd International Neurotrauma Congress &
the 4th International Roads Safety Congress

Shefa Neuroscience Research Center, Tehran, Iran, 18-20 February, 2015

*The Neuroscience Journal of Shefaye Khatam*

Volume 2, No. 4, Suppl. 3

## Poster Presentation

# Toward Treatment of Post-Traumatic Spinal Cord Injury: Differentiation of Oligodendrocytes from Adipose Stem Cells

**Azadeh Sajadian, Leila Alizadeh***

Shefa Neuroscience Research Center, Khatam Alanbia Hospital,Tehran, Iran.

***Published:* 18 February, 2015**

***Abstract***

Traumatic spinal cord injuries (SCIs) lead to severe and permanent neurological deficits. Although no effective therapeutic option is currently available, recent other studies have shown that cell transplantation strategies hold promise to enhance functional recovery after SCI. Adipose stem cells (ADSCs) obtained from pararenal and inguinal region of rats. ADSCs were cultured and then differentiated to the neural stem cells (NSCs). Directed differentiation of stem/progenitor cells to oligodendrocytes (OLCs) lineage was done and the cell viability was assessed by trypan blue. Immunocytochemistry was carried out by NF68, NF160, fibronectin and nestin for NSCs. Also, it was done by O4, O1, and oligo2 for OLCs. Results showed that fibronectin, CD44, CD90 and CD45 expressed 94.32±0.45%, 95.48±0.24% and 97.16±0.82% respectively. Expression of O1, O4 and oligo2 showed that combination of HRG, PDGF, bFGF and T3 (25 ng/ml) have an effective role in transdifferentiation of ADSCs into OLCs. ADSCs can differentiate to mature OLCs. Our suggestion is that oligodendrocytes can be used as a therapeutic strategy for treatment of SCI in future.

***Keywords:*** Oligodendrocytes, Neurological Disorders, Fibronectin.

***Corresponding Author:*** Leila Alizadeh

**E-mail:** *l.alizadehh@yahoo.com*